

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF AUGUST 13, 2021

Prepared on July 27, 2021

ITEM NUMBER: 6

SUBJECT: Resolution to Authorize Enrollment under Order No. R3-2019-0089, *General Waiver of Waste Discharge Requirements for Specific Types of Discharges*, Section D: Discharge Not Specified for Old Stage Partners, LLC, Salinas, Monterey County

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KEY INFORMATION

Location: 460 Old Stage Road, Salinas, Monterey County
APN 211-221-008-000

Type of Discharge: Treated wastewater generated from reverse osmosis system and irrigation tailwater capture and recycling system at a commercial cannabis cultivation facility.

Design Capacity: Up to 2,000 gallons per day

Treatment: Denitrifying woodchip bioreactor

Disposal: Subsurface disposal through unlined storage pond

Existing Orders: Waste Discharge Requirements WQ 2019-0001-DWQ and Order No. R3-2021-0040

ACTION: Resolution to Authorize Enrollment Under Section D (Attachment A) of Order No. R3-2019-0089

SUMMARY

This staff report provides an overview of a proposed enrollment in Order No. R3-2019-0089, *General Waiver of Waste Discharge Requirements for Specific Types of Discharges* (General Waiver), for a denitrifying woodchip bioreactor located at 460 Old Stage Road, Salinas, Monterey County. The facility is operated by Old Stage Partners, LLC (Discharger). Order No. R3-2019-0089 identifies 13 specific types of discharges that the Executive Officer may enroll in the General Waiver. Proposed low-threat

discharges not specifically identified in the General Waiver may be enrolled upon Central Coast Water Board consideration and approval. The Discharger's proposed discharge is not identified in the General Waiver; therefore, Board approval is required to enroll the discharge.

The proposed woodchip bioreactor will treat discharges from cannabis and rose cultivation and cannabis manufacturing operations. The proposed discharge consists of reverse osmosis filter residual and wastewater from an irrigation capture and recycling system, which includes manufacturing wastewater that is reused for irrigation. Treated wastewater will be discharged into an existing stormwater infiltration pond.

DISCUSSION

Old Stage Partners, LLC cultivates cannabis and roses in approximately 220,000 square feet of dirt-floor greenhouses. The operation utilizes an irrigation tailwater capture and recycling system in which excess irrigation water is collected, treated, mixed with well water, and plumbed back into the irrigation system for reuse. Additionally, cannabis manufacturing using ice water extraction – a process in which resin is separated from frozen plant material using ice water, physical agitation, and progressive filtration – is in use. The manufacturing wastewater is plumbed into the irrigation system to be used as additional irrigation water. Two reverse osmosis filtration systems supply filtered water for the ice water extraction process and, to a smaller extent, water for misting roses.

The proposed discharge consists of wastewater from the irrigation tailwater capture and recycling system, which is discharged twice per month to avoid accumulation of excess salts, and reverse osmosis filter residual. Discharges from the irrigation tailwater capture and recycling system (40,000 gallons per month) include filtered water used in the ice water extraction process that is incorporated into the irrigation supply, blended with well water, reused in irrigation on cannabis and rose plans, and subsequently captured and treated in the proposed bioreactor. The reverse osmosis filtration residual (15,000 gallons per month) is blended with discharge from the irrigation tailwater capture and recycling system prior to discharge into the bioreactor.

Prior to June 2019, the Discharger stored the irrigation recycling system and reverse osmosis wastewater and released it into an onsite stormwater infiltration pond in two discharge events per month. In June of 2019 the Discharger ceased discharge into the stormwater infiltration pond and began daily hauling of the wastewater and reverse osmosis filter residual to Monterey One Water's regional wastewater treatment facility. The Discharger is seeking regulatory coverage for an onsite treatment system as an alternative to storing and hauling the wastewater to a wastewater facility.

The Discharger enrolled in the Central Coast Water Board's Agricultural Order¹ on January 29, 2011, for waste discharges related to rose cultivation. The Discharger has

¹ The current Agricultural Order can be accessed online at:
https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/regulatory_information.html

maintained active enrollment through subsequently adopted agricultural orders in 2012, 2017 and 2021. On May 17, 2019, the Discharger enrolled in the statewide Cannabis General Order² as a Tier 2, high risk to water quality site. According to the Discharger, the irrigation capture and recycling system has been in use since 2009.

The Cannabis General Order does not provide regulatory coverage for onsite treatment and discharge of wastewater. Cannabis General Order, Attachment A, section 1, requirement 27 prohibits the wastewater from cannabis manufacturing activities defined in Business and Professions Code section 26100, indoor grow operations, or other industrial wastewater (e.g. reverse osmosis filter residual) to an onsite wastewater treatment system (e.g., septic tank and associated disposal facilities), to surface water, or to land, unless authorized by separate waste discharge requirements.

The Discharger submitted a permit application dated May 26, 2020, and a draft design for onsite treatment and disposal of up to 55,000 gallons of wastewater generated from the irrigation recycling system each month. The Discharger submitted the final bioreactor design on January 28, 2021.

The proposed treatment system includes a denitrifying woodchip bioreactor designed to reduce nitrate concentrations to acceptable levels for discharge to land and subsequent infiltration. Wastewater from onsite operations will be pumped into a 20,000-gallon storage tank and then discharged at a constant rate into the woodchip-lined bioreactor designed for hydraulic retention time of 20 hours. The woodchips provide a carbon source for denitrifying bacteria to create the anaerobic environment necessary for denitrification. The bioreactor will be constructed with a waterproof polyethylene plastic liner to prevent seeping of untreated wastewater into the surrounding soils. Inlet and outlet structures will be connected to the bioreactor using control structures that enable the operator to control the water level in the bioreactor by adding or removing stoplogs, similar to an irrigation diversion weir. As a contingency measure, the outlet structure will include a recycle pump to return treated water to the wastewater storage tank upstream of the bioreactor for further treatment if verification testing indicates that effluent targets are not met.

Treatment verification testing will be conducted per attached Monitoring and Reporting Program No. R3-2021-0059, which the Executive Officer will issue if the Central Coast Water Board authorizes the Discharger's enrollment in the General Waiver. Treated wastewater from the bioreactor will be infiltrated via an existing stormwater infiltration pond. The western edge of the stormwater pond is located approximately 50 feet from the southern bank of Gabilan Creek. To prevent commingled stormwater and treated wastewater from flowing into Gabilan Creek, discharge from the bioreactor will be discontinued when there is potential to overtop the pond's overflow structure due to wet weather. Additionally, treatment verification testing will include monitoring for salts. Salts monitoring of the bioreactor effluent is necessary to quantify the bioreactor effluent's

² State Water Resources Control Board Order WQ 2019-0001-DWQ, *General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities*, can be found online at https://www.waterboards.ca.gov/centralcoast/water_issues/programs/cannabis_cultivation/index.html

impact on shallow groundwater. Further, monitoring of the effluent will be used to address a data gap related to salts removal rates within the bioreactor. Nitrogen removal efficiencies are well understood in bioreactors, but the extent that a secondary benefit can be expected related to reduction of other types of salts, including phosphate, chloride, sodium, and magnesium, is currently unknown.

The *Water Quality Control Plan for the Central Coastal Basin* (Basin Plan)³ states that groundwater throughout the Central Coast Basin, except for that found in the Carrizo Plain groundwater, has a designated beneficial use of municipal and domestic water supply. As such, the MRP will require the Discharger to evaluate and compare the nitrate concentration in the bioreactor effluent with the primary maximum contaminant level (MCL) for nitrate, which is 10 mg/L nitrate as N.

If the effluent water quality exceeds the MCL for nitrate or if verification monitoring indicates that the discharge may cause or contribute to impairments of beneficial uses due to salt loading to shallow groundwater, staff will use monitoring data to determine appropriateness of the General Waiver as a regulatory tool for this discharge.

COMPLIANCE HISTORY

Central Coast Water Board staff observed during a routine site inspection in June 2019 that wastewater from a tailwater recovery and reuse system was disposed of into an onsite stormwater infiltration pond. The pond overflow structure is designed for direct discharge into Gabilan Creek. Water quality data indicated that the irrigation recycling system discharge exceeded for the MCL for nitrate, which is 10 mg/L nitrate as nitrogen.

The Basin Plan does not include numeric water quality objectives for this area of the Salinas valley groundwater basin. However, staff compared effluent data to local groundwater data. The effluent is not expected to degrade local groundwater; however, this will be verified through ongoing treatment verification through the MRP.

Analytical results of samples from the irrigation recycling system discharge and the reverse osmosis can be found in Table 1.

³ The 2017 Water Quality Control Plan for the Central Coastal Basin can be accessed online at: https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/docs2017/2017_basin_plan_r3_complete.pdf

Table 1: Water Quality Analytical Results

Constituent	Results: Irrigation Recycling System Discharge	Results: RO residual	Units
pH	6.5	7.4	pH units
Specific Conductance	1600	1400	µs/cm
Total Alkalinity as CaCO ₃	81	390	mg/L
Total Dissolved Solids	1200	960	mg/L
Calcium	130	15	mg/L
Magnesium	38	3.5	mg/L
Sodium	61	300	mg/L
Potassium	150	0.54	mg/L
Sulfate (SO ₄)	290	160	mg/L
Chloride	89	97	mg/L
Nitrate (as N)	61	20	mg/L
Nitrite (as N)	0.62	ND	mg/L
Total Kjeldhal Nitrogen (TKN)	5.5	ND	mg/L
Boron	120	64	µg/L
Arsenic	1.5	0.98	µg/L

On November 21, 2019, the Central Coast Water Board issued a notice of violation for the discharge to the pond, which is not authorized under the Cannabis General Order. The Discharger is currently storing the wastewater onsite in an above-ground 20,000-gallon storage tank and having it hauled to a permitted wastewater treatment facility.

REGULATORY CONSIDERATIONS

Discharges of wastewater from the irrigation water recycling system to the stormwater infiltration pond are not authorized by the Cannabis General Order. The Cannabis General Order does not provide regulatory coverage for onsite treatment and discharge of wastewater. Cannabis General Order, Attachment A, section 1, requirement 27 prohibits the wastewater from cannabis manufacturing activities defined in Business and Professions Code section 26100, indoor grow operations, or other industrial wastewater (e.g. reverse osmosis filter residual) to an onsite wastewater treatment system (e.g., septic tank and associated disposal facilities), to surface water, or to land, unless authorized by separate waste discharge requirements.

Because the Cannabis General Order does provide sufficient regulatory coverage for treatment and onsite disposal of discharges from the irrigation recycling system and reverse osmosis residual, staff is proposing an alternative permitting mechanism through the General Waiver.⁴ The General Waiver conditionally waives waste discharge requirements for 13 specific discharge categories as described in Attachment A of the

⁴ General Waiver for Specific Types of Discharges R3-2019-0089 and attachments can be accessed online at: https://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/#r3_go_wdr

General Waiver, sections A, B and C. Attachment A, section D allows for enrollment of discharges not otherwise specified, contingent upon Central Coast Water Board consideration and approval at a regularly scheduled Central Coast Water Board hearing.

The specific discharge types listed in each section of Attachment A of the General Waiver have the same or similar characteristics and do not pose a significant threat to water quality. It is appropriate to enroll the proposed discharge in the General Waiver because the nature and level of threat to water quality of the proposed bioreactor effluent is similar to the other discharges specified in Attachment A.

Interest in onsite treatment is increasing across several sectors of the regulated community, especially among cannabis operations. Staff intends to consider an additional discharge category in the next renewal of the General Waiver specific to onsite treatment for low-threat manufacturing or industrial wastes, such as reverse osmosis residuals, which will allow for direct enrollment in the General Waiver as opposed to requiring Central Coast Water Board approval prior to enrollment.

HUMAN RIGHT TO WATER

California Water Code section 106.3, subdivision (a) states that it is the policy of the State of California “that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitation purposes.” On January 26, 2017, the Central Coast Water Board adopted Resolution No. R3-2017-0004, which affirms the realization of the human right to water and the protection of human health as the Central Coast Water Board's top priorities. The proposed enrollment specifies the effluent numeric limitations applicable to the Discharger to protect the municipal and domestic supply drinking water beneficial use and improve drinking water quality for those that depend on groundwater and surface waters as their drinking water sources.

DISADVANTAGED COMMUNITIES

The Central Coast Water Board implements regulatory activities and water quality projects in a manner that ensures the fair treatment of people of all ethnicities, cultures, backgrounds and income levels, including disadvantaged communities (DACs). Additionally, the Central Coast Water Board is committed to providing all stakeholders the opportunity to participate in the public process and provide meaningful input to decisions that affect their communities. Staff has evaluated the disadvantaged community status for the Discharger. The discharge location (an unincorporated area of Monterey County) is not within a DAC, however the downstream receiving water areas (City of Salinas) are considered DAC. Staff has determined that the regulation of these types of facilities in compliance with the proposed General Waiver will not pose a significant threat to water quality and is therefore unlikely to impact DACs. If impacts to surface water or groundwater result from the discharges regulated by the General Waiver, Central Coast Water Board staff will reevaluate regulatory coverage and help

facilitate outreach and education to inform affected parties and connect them with available resources.

CLIMATE CHANGE

The Central Coast faces the threat and the effects of climate change for the foreseeable and distant future. To proactively prepare and respond, the Central Coast Water Board has launched the Central Coast Water Board's Climate Action Initiative, which identifies how the Central Coast Water Board's work relates to climate change and prioritizes actions such as water conservation, reuse and recycling to improve water supply resiliency, sea level rise and flood mitigation and adaptation, and that improve energy efficiency and reduce greenhouse gas production. The Climate Action Initiative is consistent with the Governor's Executive Order B-30-15 and the State Water Board's Climate Change Resolution No. 2017-0012.

The proposed enrollment protects water quality and aquatic habitat while facilitating the ongoing irrigation tailwater capture and recycling system. Further, by treating the wastes onsite, carbon emissions associated with regular trucking of the wastewater to the nearest wastewater treatment facility are avoided.

COMMENTS

Interested parties were notified via email on July 7, 2021, of the opportunity to provide written public comment on this proposed enrollment in the General Waiver. One comment was received from the Monterey County Health Department on July 13, 2021. Monterey County staff requested additional detail and explicit approval for the reuse of ice water extraction process water in the irrigation supply and subsequent capture and treatment in the bioreactor. Central Coast Water Board staff updated the "Discussion" section of this staff report with additional detail related to the reuse of ice water extraction process water, which is included as part of this permitting action.

CONCLUSION

The proposed discharge is appropriately regulated under the General Waiver, and the proposed enrollment is consistent with the General Waiver, complies with state and federal law and regulations, and is protective of water quality. The proposed monitoring and reporting program is sufficient to demonstrate compliance with the General Waiver.

RECOMMENDATION

Adopt Resolution No. R3-2021-0063 authorizing the Executive Officer to enroll the proposed discharge in the General Waiver.

ATTACHMENTS

1. Proposed Resolution No. R3-2021-0063
2. Monitoring and Reporting Program No. R3-2021-0059
3. [Order No. R3-2019-0089](#), [Attachments](#)

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